

Listing of the Claims:

The following is a complete listing of all the claims in the application, with an indication of the status of each:

1. (Currently Amended) A catalyst comprising:

a metal phosphide complex having the formula MP_x , wherein M is selected from the group consisting of V, Cr, Mn, Fe, Co, Ni, Nb, Mo, Ta, and W, and wherein x ranges from about 0.1 to about 10; and

a high surface area support of at least $50m^2/g$, wherein the metal phosphide complex is dispersed on the high surface area support, wherein said high surface area support is selected from the group consisting of carbon, silica, titania, thoria, magnesia, zirconia, kaolin, bentonite, kieselguhr, zeolites, and combinations thereof.

2. Canceled

3. (Original) The catalyst of claim 1 further comprising a promoter selected from the group consisting of the alkali metals, alkaline earth metals, platinum group metals, rhenium, copper, halides, boron, carbon, nitrogen, aluminum, sulfur, gallium, germanium, arsenic, tin, antimony, bismuth, selenium and tellurium.

4. (Original) The catalyst of claim 1 wherein x ranges from about 0.5 to about 3.

5. (Original) The catalyst of claim 1 wherein the metal phosphide complex is deposited on the support in the range of about 1 to about 40% by weight complex to support.

6. (Original) The catalyst of claim 1 wherein the metal phosphide complex is deposited on the support in the range of about 10 to about 30% by weight complex to support.

7. (Currently Amended) A metal phosphide catalyst comprising:

a metal phosphide complex having the formula $A_aB_bP_y$, wherein A and B are

each selected from the group consisting of V, Cr, Mn, Fe, Co, Ni, Nb, Mo, Ta, and W, wherein the sum of a and b is 1, the ratio of a and b ranges from about 0.01 to about 100, and y ranges from about 0.1 to about 10; and

a high surface area support of at least 50m²/g, wherein the metal phosphide complex is dispersed on the high surface area support, wherein said high surface area support is selected from the group consisting of carbon, silica, titania, thoria, magnesia, zirconia, kaolin, bentonite, kieselguhr, zeolites, and combinations thereof.

8. Canceled

9. (Currently Amended) The catalyst of claim 7 further comprising a promoter selected from the group consisting of the alkali metals, alkaline earth metals, platinum group metals, rhenium, copper, halides, boron, carbon, nitrogen, aluminum, sulfur, gallium, germanium, arsenic, tin, antimony, bismuth, selenium and tellurium.

10. (Original) The catalyst of claim 7 wherein the ratio of a to b ranges from about 0.1 to about 10.

11. (Original) The catalyst of claim 7 wherein the ratio of a to b ranges from about 0.2 to about 5 and wherein y ranges from about 0.5 to about 3.

12. (Original) The catalyst of claim 7 wherein the metal phosphide complex is deposited on the support in the range of about 1 to about 40% by weight complex to support.

13. (Original) The catalyst of claim 7 wherein the metal phosphide complex is deposited on the support in the range of about 10 to about 30% by weight complex to support.

14-39. Canceled

40. (New) The catalyst of claim 1, wherein M is Mo.
41. (New) The catalyst of claim 1, wherein M is W.
42. (New) The catalyst of claim 7, wherein the catalyst includes Mo.
43. (New) The catalyst of claim 1, wherein the support has a surface area of at least about 100 m²/g by BET method.